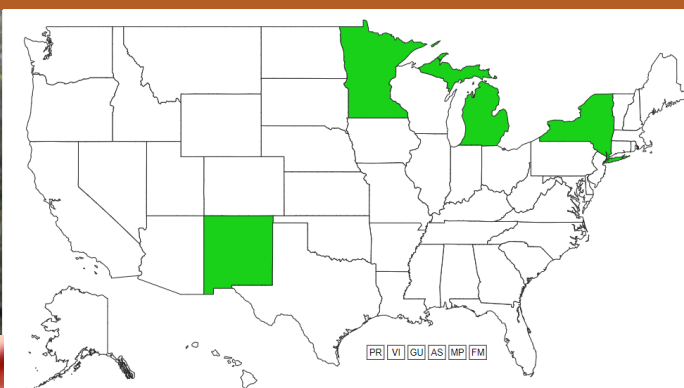


USACE Invasive Plant Species Best Management Practices

Starry Stonewort (*Nitellopsis obtusa*) - Characeae (Algae)



Distribution of *Nitellopsis obtusa* in the United States. EDDMapS, 2020.



Habitat & Life History

Native to Europe and West Asia – OBL – Submerged annual macroalga –Vegetative reproduction (via bulbils)

Integrated Management Strategy Selections

Prevention

Chemical

Biological

Mechanical

Cultural



PREVENTION

- Maintain healthy, diverse community to prevent invasive plant establishment & formation of dense monotypic mats



CHEMICAL CONTROL

- Herbicides—copper, diquat, endothall
- Use-pattern—water column
- *Refer to product label for specific instructions on rate & use-pattern



BIOLOGICAL CONTROL

- Agent—*Ctenopharyngodon Idella* (Triploid grass carp), nonselective grazer
- Rearing/release—Restricted in some US states, purchase from certified hatchery



MECHANICAL CONTROL

- Hand pull, may require divers, harvester



CULTURAL CONTROL

- Benthic barriers, drawdown



MANAGEMENT SEQUENCING

- Timing of control methods—best option is to apply combination of control measures in spring (early growth)
- Monitoring—assess vegetative cover relatively early following chemical treatment (4-6 weeks)
- Niche-filling/Restoration—conduct native emergent/submerged & riparian plantings



COMMENTS

- Starry stonewort is a dioecious, macrophytic algae that spreads via fragments (i.e. bulbils). No females are known in the US & reproduction by spores unlikely at this time; mechanical control may contribute to unintentional spread

